



# Volunteer Lake Assessment Program Individual Lake Reports

## COBBETTS POND, WINDHAM, NH

### MORPHOMETRIC DATA

Watershed Area (Ac.):	2,048	Max. Depth (m):	19.2	Flushing Rate (yr <sup>-1</sup> )	0.4
Surface Area (Ac.):	345	Mean Depth (m):	5.2	P Retention Coef:	0.8
Shore Length (m):	7,400	Volume (m <sup>3</sup> ):	7,208,000	Elevation (ft):	177

### TROPHIC CLASSIFICATION

Year	Trophic class
1986	MESOTROPHIC
2003	EUTROPHIC

### KNOWN EXOTIC SPECIES

Variable Milfoil

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

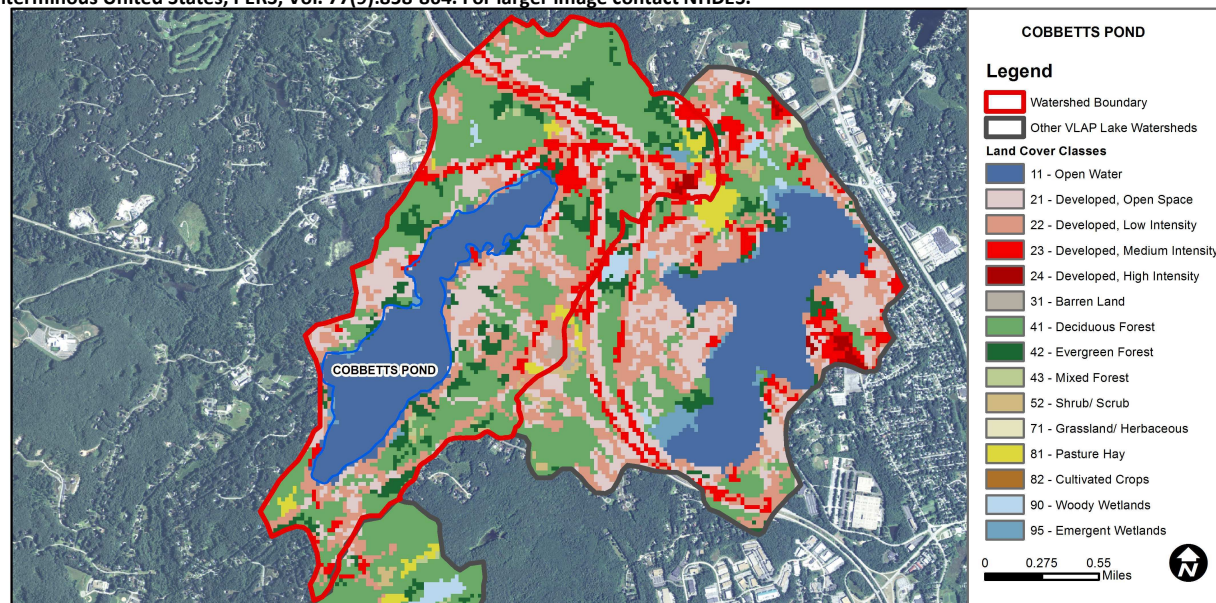
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Cautionary	One exceedance of single sample criteria but not enough data to calculate geometric mean. More data needed.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

### BEACH PRIMARY CONTACT ASSESSMENT STATUS

COBBETTS POND - DUNKAN BEACH	E. coli	No Data	No Data for this parameter.
COBBETTS POND - TOWN BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.
COBBETTS POND - TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

### WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	19.5	Barren Land	0.34	Grassland/Herbaceous	0
Developed-Open Space	14.9	Deciduous Forest	31.57	Pasture Hay	1.44
Developed-Low Intensity	15	Evergreen Forest	7.92	Cultivated Crops	0
Developed-Medium Intensity	7.25	Mixed Forest	0.22	Woody Wetlands	0.14
Developed-High Intensity	0.27	Shrub-Scrub	0.22	Emergent Wetlands	0.9



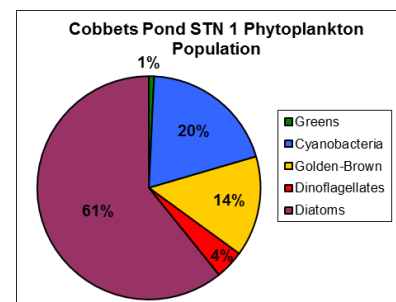
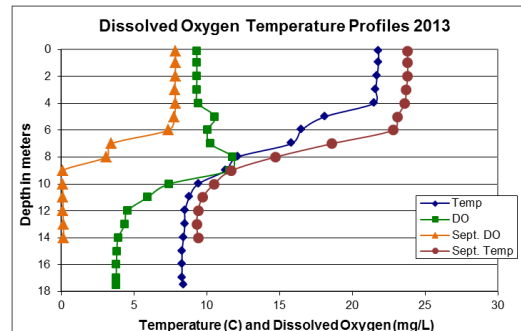
# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

## COBBETTS POND, STN. 1, WINDHAM, NH

### 2013 DATA SUMMARY

#### OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- CHLOROPHYLL-A:** Chlorophyll levels were relatively low in June and September and less than the state median. However, historical trend analysis indicates significantly increasing (worsening) chlorophyll since monitoring began.
- CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity and chloride levels were elevated and much greater than the state medians. Historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity since monitoring began.
- E. COLI:** Town Beach E. coli levels were slightly greater than the state standard for public beaches.
- TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were slightly elevated in June but decreased to lower levels in September. Historical trend analysis indicates significantly increasing (worsening) epilimnetic phosphorus since monitoring began. Hypolimnetic phosphorus was slightly elevated in September likely due to the release of phosphorus from bottom sediments under anoxic conditions. Monson Inlet and Mueller Stream phosphorus levels were elevated in June following significant storm event.
- TRANSPARENCY:** Transparency was better than the state median and improved slightly in September. Although transparency has improved slightly in recent years, historical trend analysis indicates significantly decreasing (worsening) transparency since monitoring began.
- TURBIDITY:** Epilimnetic turbidity was low in June and September. Monson Inlet and Mueller Stream turbidity was elevated after significant storm event.
- pH:** pH levels were sufficient to support aquatic life. Historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years.
- DISSOLVED OXYGEN:** Dissolved oxygen levels were slightly lower in the hypolimnion in June but were above 1.0 mg/L. By September, hypolimnetic dissolved oxygen levels had decreased to below 1.0 mg/L. When phosphorus levels are below 1.0 mg/L, phosphorus and other organic compounds are released from bottom sediments resulting in elevated phosphorus and turbidity.
- RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer to better assess seasonal and historical trends. Continue implementing stormwater management projects in the watershed. Continue working with local and state officials to address chloride and conductivity either through implementing low salt zones, educating residents on proper use of de-icing materials, or local road agents and maintenance companies obtaining a NH Voluntary Salt Applicator License through the UNH Technology Transfer Center's Green SnowPro Certification. Keep up the great work!



**NH Water Quality Standards:** Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

**Chloride:** < 230 mg/L (chronic)

**E. coli:** > 88 cts/100 mL – public beach

**E. coli:** > 406 cts/100 mL – surface waters

**Turbidity:** > 10 NTU above natural level

**pH:** 6.5-8.0 (unless naturally occurring)

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.

**Alkalinity:** 4.9 mg/L

**Chlorophyll-a:** 4.58 mg/m<sup>3</sup>

**Conductivity:** 40.0 uS/cm

**Chloride:** 4 mg/L

**Total Phosphorus:** 12 ug/L

**Transparency:** 3.2 m

**pH:** 6.6

Station Name	Table 1. 2013 Average Water Quality Data for COBBETTS POND, STN 1								
	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.	Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m	ntu	
							NVS	VS	
Fossa Rd Inlet			76	414.0		13			0.21
Monson Inlet			87	336.0		37			3.61
Mueller Stream			100	416.0		30			2.43
Outlet			54	322.0		14			0.49
Epilimnion	23.0	3.76	57	323.0		12	3.73	4.05	0.84
Metolimnion				319.0		17			1.03
Hypolimnion				319.3		73			1.32
Town Beach				261.0	110	16			0.46

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data moderately variable.	Chlorophyll-a	Degrading	Data significantly increasing.
Conductivity	Degrading	Data significantly increasing.	Transparency	Degrading	Data significantly decreasing.
			Phosphorus (epilimnion)	Degrading	Data significantly increasing.

